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Director - FCC Relations

August 10, 1994

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

EX PARTE

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

RE: CC Docket No. 94-1

Today, Bell Atlantic is filing the attached written Ex-Parte in the aforementioned proceeding. Attached is a copy of the Declaration of Robert G. Harris in Support of Reply Comments of Bell Atlantic in the Matter of Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992: Rate Regulation (MM Docket No. 93-215) and the Adoption of a Uniform Accounting System for Provision of Regulated Cable Service (CS Docket No. 94-28) filed August 1, 1994. This declaration pertains to the productivity issues that are germane to the Price Cap Performance Review for Local exchange Carriers, CC Docket No. 94-1.

Please include this letter and the attached into this record as appropriate.

Sincerely,

Maureen Keenan

Attachment

CC: G. Vogt
J. Walls
D. Nall

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington D.C.

AUG 10 1994

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the matter of)	
)	
Implementation of Sections of the Cable)	MM Docket No. 93-215
Television Consumer Protection and)	
Competition Act of 1992: Rate Regulation)	
)	
and)	
)	
Adoption of a Uniform Accounting System)	CS Docket No. 94-28
for Provision of Regulated Cable Service)	

DECLARATION OF ROBERT G. HARRIS
IN SUPPORT OF REPLY COMMENTS OF BELL ATLANTIC

A. Qualifications and Purpose of Declaration

1. My name is Robert G. Harris. I am an Associate Professor in the Walter A. Haas School of Business, University of California, Berkeley, and Principal in the Law & Economics Consulting Group. I have presented testimony in this proceeding on the importance of adopting comparable or corresponding regulatory policies toward the cable and local exchange telephone industries as competition between those industries increases. In my earlier testimony, I explained why the Commission should adopt the same conceptual standard for the productivity offset in the cable and LEC price cap plans. In both cases, it is appropriate that future price increases be limited to inflation less a productivity offset, where the offset is set to equal the difference between industry-specific productivity growth and the average growth in productivity for the U.S. economy.

2. This declaration will comment on the use of estimates of total factor productivity (TFP) growth by Christensen Associates (Attachment B to comments of the National Cable Television Association) in setting a productivity offset for the price cap on cable rates. In Section B, I will compare the Christensen study of TFP growth for local exchange carriers, which was based on highly detailed data covering nearly the entire industry, with the Christensen cable industry TFP study, which was based on a very limited set of data. I will explain the nature and effects of the data limitations on the Christensen estimates, and why those results should be adjusted to correct for the data limitations. In Section C., I will explain how the Christensen cable and LEC TFP results should be adjusted to make them comparable. I will show that, if the LEC TFP estimates were based on an output measure comparable to that employed in the cable TFP study, the resulting LEC productivity offset would fall from 1.7% to -.2%. Alternatively, I will show that, if the cable output measure were comparable to the one used in the LEC TFP study, measured cable TFP would increase from -1.9% to +4.4%. Both of these results provide empirical support for my position that the Commission should adopt a productivity offset in cable price caps that is no less than that adopted for the LEC price cap plan.

3. Section D. will respond to the argument of Economists Incorporated that the dramatic increases in cable rates during the 1980's supports the cable industry's argument **that there** should be no productivity offset in the cable price cap. That argument **is based** on flawed reasoning and would essentially reward cable companies with higher rates in the future, on the basis of their having raised rates much faster than inflation in the past. The whole point of the Cable Act of 1992 was to prevent cable companies from continuing to raise their prices as they did between 1984 and 1992. Section E is a brief summary of my opinions and recommendations.

B. The Data Limitations in the Cable TFP Study Bias the Estimates of Cable Productivity Growth Downward

4. Christensen Associates presented its study of historical TFP growth for local exchange carriers in the Commission's LEC price cap review.¹ Christensen estimated historic TFP growth for LECs at 2.6%, which generates a productivity offset of 1.7% for LEC price caps.² While Christensen Associates used a similar methodology for estimating TFP growth in the cable industry, there are substantial differences in the two studies. These differences, in sample size, sample bias and measures of output, mean that the results of the two studies are not directly comparable.³

5. The Christensen LEC TFP study used data from all seven Regional Bell Holding Companies, GTE and Southern New England Telephone, comprising roughly 93% of all LEC access lines. In contrast, the cable study was based on a data request

"sent to nine Multiple System Operators...which serve approximately one-half of all cable television subscribers in the United States...Three MSOs, serving 3.7 million subscribers, were able to send us the necessary data. These 3.7 million subscribers represent approximately six percent of all U.S. cable subscribers. Two of the MSOs were able to provide data for the full 1984-1993 period; the third MSO was able to provide data for 1988-1993."
(Christensen Cable TFP Study, p. 3).

¹ Price Cap Performance Review of Local Exchange Carriers, CC Docket No. 94-1, Comments of the United States Telephone Association. Attachment 6, "Productivity of Local Telephone Operating Companies." (Filed May 9, 1994).

² The appropriate productivity offset in a price cap plan is the difference between the industry-specific TFP and the TFP for the economy as a whole. Since LEC TFP was estimated at 2.6% and the average TFP for the U.S. economy at .9%, the resulting LEC productivity offset would be 1.7%.

³ Christensen readily acknowledges these differences: "While the methodology is the same as that used in the telephone industry TFP studies, its application differs to some degree, due to data limitations." Christensen Associates, "Productivity Growth in the Cable Television Industry," June 1994, page 4.

The results of a TFP study covering 6% of the industry are not comparable to results from a study covering 93%. This must mean that the sample excludes the largest MSOs, TeleCommunications, Inc. and Time-Warner, each of which has more than six percent of all cable subscribers.⁴ This would be equivalent to the LECs presenting a productivity study that excluded the seven RBOCs and GTE and included only three small, independent LECs. Were the LECs to present a productivity study based on the historical performance of Centel, United Telephone and Alltel, for example,⁵ the FCC would presumably reject the results of that study as inadequate and not indicative of TFP growth in the industry. There are several problems with basing industry-level policy conclusions on historical TFP measured from so small a subset of the industry.

6. First, there is no way to know whether the three responding MSOs experienced more or less rapid TFP growth than other cable firms. I would note, though, that the responding firms are not a random sample of cable operators. Given the nature of the data solicitation process, there could well have been a "self-selection bias," since each firm decided whether or not it would respond to the data request. If the cable operators who have experienced the highest rates of productivity growth chose not report their data to Christensen Associates, the TFP study is based on a biased sample. It is especially troubling that neither of the largest MSOs, TCI or Time-Warner, is included in the sample. If TFP growth were faster for large MSOs than for

⁴ TCI has 11.3 million subscribers, Time-Warner has 6.7 million subscribers. Since the total number of subscribers in the sample is only 3.7million, neither is included in the sample. See Television Digest, May 23, 1994, p. 4.

⁵ According to the USTA's 1993 Statistics of the Local Exchange Carriers for 1992, the total number of access lines for United Telecom, CENTEL and ALLTEL was approximately 7.1 million access lines or about 5% of the 144.1 million total network access lines in the US.

small MSOs, the Christensen Associates' results would not be representative of the industry. The magnitude of this potential source of bias is quite large. For example, if average input growth for larger MSOs were half the rate of the three MSOs in the study sample, TFP growth for the industry would be about +0.9%, versus the -1.9% reported by Christensen.⁶ There is little or no such bias in the LEC TFP study, in contrast, because it was based on the largest U.S. local exchange carriers, comprising 93% of all access lines.⁷

7. Second, because of the small number of firms in the sample, the timing of expenditures and of growth in output is unlikely to be typical of the industry. In the Christensen sample of three MSOs, output and input growth fall from their 1985 rate, rising again in 1988-89. Measured TFP growth falls from 12% to -23% between 1988 and 1989.⁸ This period coincides with the addition of data from a third MSO into the sample, which suggests that the reduction in measured TFP is probably not applicable to the cable industry as a whole. Furthermore, in capital-intensive, network-based services like cable and telephone, productivity growth is likely to differ among firms depending on whether the system is under construction and expanding

⁶ Using 1994 subscribership data, about 54 percent of subscribers are served by an MSO having more subscribers than the average of the three MSOs participating in the Cable TFP study: $(3.7/3 = 1.23 \text{ million})$. See Cablevision, June 6, 1994, p. 53. TFP growth for this sample would be 3.3 percent $(8.5 - (10.3/2)\text{average output growth minus one-half average input growth})$. A weighted average of the large and small MSOs' TFP growths is then 0.9 percent.

⁷ Significantly faster or slower TFP growth for the small telephone companies not covered in the LEC TFP study would not lead to a large bias: if the input growth rate for the small telephone companies omitted from the LEC TFP study were twice the growth rate of those in study, measured LEC TFP would fall from 2.6% to 2.5%, and the corresponding LEC productivity offset would drop from 1.7% to 1.6%. This adjustment was calculated as follows: input growth for the telephone companies in the TFP study was approximately 0.94% annually, output growth was 3.55% per year. Total Factor Productivity growth was 2.59% for 93% of access lines. The seven percent not included in the TFP study would have, by assumption, 1.86% annual growth in inputs and 1.67% TFP growth $(3.55 - (0.94 \times 2))$. Weighted TFP growth would then be 2.53% for the entire industry.

⁸ Appendix 1 of the Christensen Cable TFP study.

or whether it has reached maturity. In building out a network, the firm incurs high initial increases in inputs because of large expenditures on fixed plant. If accounting followed economic theory, this growth in inputs would be capitalized and spread over the economic life of the assets constructed. However, the high growth of input quantities during the 1985 and 1989 periods suggests that the three particular firms in the sample were undertaking significant construction. Similarly, output growth peaks in 1985-86 and 1988, which is again consistent with the hypothesis that two firms built out their networks in 1985-86 and the third in 1988. Hence, it is highly unlikely that these three firms are typical of the U.S. cable industry.

C. Adjusting the Cable and LEC TFP Estimates for Comparable Measures of Output and Quality Changes

8. There are two different approaches to measuring output for multi-product firms: (a) physical measures of output growth (subscribers, channels, minutes of use, etc.) weighted together using service revenues as weights, and (b) an index of the quantity of output obtained by subtracting the growth of prices from the growth of revenue for each service and averaging the results, using service revenues as weights. Historical productivity growth estimates using these different approaches to measuring output growth are not likely to be comparable. In addition, both methods of measuring output assume that all relevant aspects of the service are captured either in the physical measurements used or in the revenue and price indices.

9. The Christensen cable TFP study measures industry output as a revenue-weighted average of the number of basic and premium subscribers. In contrast, the Christensen LEC TFP study measures output as revenue from each of the telecommunications services supplied by LECs, deflated to remove the effects of

price changes. Christensen explains his use of “number of subscribers” as the sole measure of cable output as due to data limitations. Estimating TFP growth using the number of subscribers as the sole measure of output omits at least three other significant cable industry outputs that have increased over the period: (a) the number of channels in basic tier and first tier services; (b) overall viewership (as measured in ratings, for example); and (c) advertising. Consider the increase in the number of basic tier channels: in the cable TFP study, the costs of the increase in channels are effectively measured as reductions in productivity. In order to attract the same number of subscribers, all else equal, the cable company would have to use more inputs. The fact that customers valued the additional channels, paid more (and were willing to pay more) for the additional channels is omitted from this measure of the output of a cable system. This represents a significant downward bias in the estimation of TFP.

10. While producing a comparable TFP study for LECs and Cable companies would be difficult because of data limitations, it is straightforward to obtain an estimate of the magnitude of the difference that these two approaches to measuring output can make. First, one can adjust the LEC productivity estimate by using a comparable measure of output to the one used in the cable TFP study. Suppose that the output of LECs were measured by numbers of subscribers. During the 1984-92 period, residential **telephone** subscribership increased from 79.9 million to 91.0 million households, **achieving** an annual rate of growth of 1.64%. During approximately the same period, the number of business establishments increased from 5.3 to 7.5 million at an annual rate of growth of 1.61%. In the LEC TFP study, output growth averaged 3.55% per year from 1984-93. Using 1.6% as the annual rate of growth of LEC output would reduce TFP growth in the LEC TFP study from 2.6% per year to

0.7%, with a corresponding reduction in the LEC productivity offset to -.2%. Thus, if one uses a measure of LEC output that is comparable to that used in the cable TFP study, one would conclude that there should be no productivity offset in the price caps of either industry.

11. A second method of making the cable and LEC TFP results comparable is by adjusting the cable results to reflect measures of output that are more comparable to the output measures used in the LEC TFP study. A physical measure of the output of a cable system takes into account the number of subscribers and the qualities of the output to which they subscribe, because the number of subscribers does not, by itself, capture all of the output of a cable company. A system that provides 24 channels in its basic service tier and has 100 subscribers produces more output than another system that also has 100 subscribers but only provides 12 channels in its basic tier. Output for the first system exceeds output for the second because it has twice the number of channels; customers would be willing to pay more for subscribing to the first system. If all channels were equally valued by subscribers, this difference could be accounted for by measuring output as the product of subscribers and channels (subscriber-channels). The average number of active channels grew 8.7% per year, from 29 in 1984 to 56 in 1992.⁹ Subscriber-channels thus grew at an annual rate of 14.7% from 1984 through 1992. If the measure of output in the Cable TFP study were adjusted to account for the change in the average number of channels, estimated TFP growth for the cable industry would

⁹ The 1984 estimate is from Federal Communications Commission, Report, MM Docket No. 89-600, July 31, 1990, Appendix F, p. 23. The 1992 figure is estimated from data in Cablevision, May 4, 1992 at 20, by taking a weighted average of the midpoints of the reported ranges of channel capacity per system.

increase from -1.9% to +4.4%.¹⁰ After subtracting economy-wide TFP of approximately .9% during that period, that would suggest a cable price cap productivity offset of 3.5%, compared to a 1.7% productivity offset for LECs. Such a result is not only far more comparable than a superficial reading of the two Christensen studies would indicate, it is also consistent with my expectation that the cable productivity offset should, if anything, be higher than the LEC productivity offset.

D. Dramatic Cable Rate Increases in the 1980's Do Not Support a Zero Productivity Offset in Cable Price Caps for the 1990's

12. In their Attachment C to the Comments of the National Cable Television Association in this proceeding, Economists Incorporated acknowledge that there was a substantial increase in the number of cable channels and quantity of cable programming available to subscribers during the period for which Christensen measured TFP growth for three cable MSOs. This evidence supports my view that the use of subscribers as an output measure strongly biases the estimate of cable productivity growth downward.

13. Economists Incorporated also argue, though, that "the price increases for all forms of competitive franchises were likely the result of improved quality of

¹⁰ In 1984, there were an average 29.0 channels and 37.3 million subscribers for a total of 1081.7 subscriber-channels. In 1993, there were approximately 56.5 channels per system and 57.2 million subscribers for a total of 3231.8 million subscriber-channels. Using subscriber channels as a measure of output translates into an annual output growth rate of 14.7%. Input growth was estimated by the Cable TFP study at 10.33%. Thus TFP growth increases from -1.9% to 4.4% (14.7 - 10.33).

service,"¹¹ and that "any adoption of a productivity improvement offset by the Commission should be coupled with a much larger quality improvement offset."¹² This conclusion is flawed on two counts. First, Economists Incorporated admits that they "do not have information to place [cable franchises] in 1986 competitiveness categories."¹³ That means that some share of the price increases they observed may have resulted from cable operators exploiting their market power, rather than from quality improvements. Second, the supposedly enormous increase in program licensing fees cited as evidence of improved quality may also reflect the market power of cable programming providers -- many of which are vertically integrated with the cable operators paying the license fee. Since the demand for cable programming is derived from the demand for cable subscription services, cable programmers could exploit the market power of their customers, the cable operators, by raising their prices above competitive levels. Hence, some share of the increased license fees reflects not improved quality but increased extraction of economic rents from consumers. Given the express objectives of Congress in passing the Cable Act of 1992, it would be wholly inappropriate to allow the cable industry to justify higher rate increases in the future on the basis of their high rate increases in the past.

¹¹ Economists Incorporated, "A Comparison of Real Rates Charged by Competitive Cable Franchises in 1986 and 1993," page 1.

¹² Ibid., page 5.

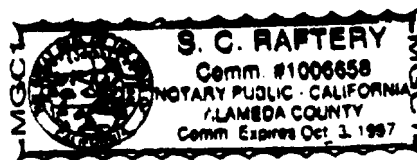
¹³ Ibid., page 2.

E. Conclusions

14. It is indisputable that competition between cable systems operators and local exchange carriers will grow dramatically. One cannot justify differences in productivity offsets for cable and LECs merely because telephone service has been traditionally considered a “utility” while cable TV has not. To promote efficiency, innovation, investment and balanced competition, it is essential that the Commission adopt even-handed regulatory policies toward cable and LECs. In the design of price caps for the two industries, there is no valid economic basis for different productivity offset factors. In both cases, the Commission should adopt productivity offsets that reflect expected productivity gains in each industry. The TFP study of Christensen Associates is based on very limited, possibly biased data. The Commission should not allow the cable industry to subvert the regulatory process merely by deferring, until such a late date, a proper, comprehensive study of total factor productivity. Properly understood and adjusted, the cable industry-sponsored Christensen study supports the need to set the cable productivity offset at a level no lower than that adopted in the LEC price cap plan.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on this 25th day of July, 1994.

Robert G. Harris
Robert G. Harris



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State of California
County of Alameda

On 7/28/94 before me the undersigned, a Notary Public for the State of California, personally appeared Robert G. Harris, proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument, and acknowledged that he executed it.

S. C. Raftery
Notary Public